Version

5.5

UNITED STATES DEPARTMENT OF AGRICULTURE

FARM SERVICE AGENCY

GIS Training Material

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Digitizing Tool User Guide

GIS TRAINING MATERIAL

Digitizing Tool User Guide

Farm Service Agency, USDA
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OVERVIEW

The Common Land Unit (CLU) Digitizing Extension is a package of editing tools created to assist in the process of creating and maintaining Common Land Unit polygons. Specifically, the tool was designed to:

- make it easier to create and edit common land unit files
- create and edit data at an appropriate scale
- provide Error Checking and Quality Control features
- automate attribute data entry

INITIAL INSTALLATION

NOTE: This tool requires ESRI's ArcView software, version 3.X. It **must be installed on each individual workstation** and the person performing the installation **must have administrative privileges**.

Close all ArcView sessions before installing this tool. Then double-click on the "CLU Digitizing Tool" icon (**CLUDigitizingToolv5.5exe**). The necessary files will install themselves in the proper directories. Additional icons will be installed on the "Start Menu" of the Windows desktop. **See the read.me file for detailed instructions**.

NOTE: Uninstall or install will remove or over write files in the c:\usda\common directory. If users have customized these files and want to preserve them, perform the following steps before uninstall or install:

1.) Backup customized common files from c:\usda\common to a floppy disk or temporary location on the hard drive (ex: c:\temp).

2.) Replace customized files from floppy or temporary location to c:\usda\common after completing installation of new tool.

WHAT'S NEW IN VERSION 5.5

What's New in Version 5.5 of CLU Digitizing Tool

Utilities

- Auditing/CLU Linker tool now asks the user if they wish to remove the link tables if they already exist in the project.
- Split by Acreage Tool was included, so user can define an acreage value, an angle, and a direction with which to split to polygon.
- Image Synchronize Tools allow users to synchronize two views when zooming/panning.
- Added Date button to Layout Main Toolbar allows user to insert current date on any layout.
- Changed cursor on Measure Tool to crosshair.
- Changed color of graphic for the quick acreage calculator to green.
- Created tool to modify vertices of acreage graphic and update graphic acreage.

Multi-Item Labeling Tool

- Added the ability to create labels rounded to Tenths or Hundredths.
- Font and Label Settings Templates" for the Multi-item labeling tool have been added so the users can easily save, load, and delete their personal settings.
- Placed a space before pre-text and after post-text.

Wetland Tools

- Set scale dependency for creating wetland points to 1:10,000 (max).
- "Create" Wetland shapefile button prompts users where to place it.

What's New in Version 5.5 of CLU Digitizing Tool (cont.)

Theme Preferences

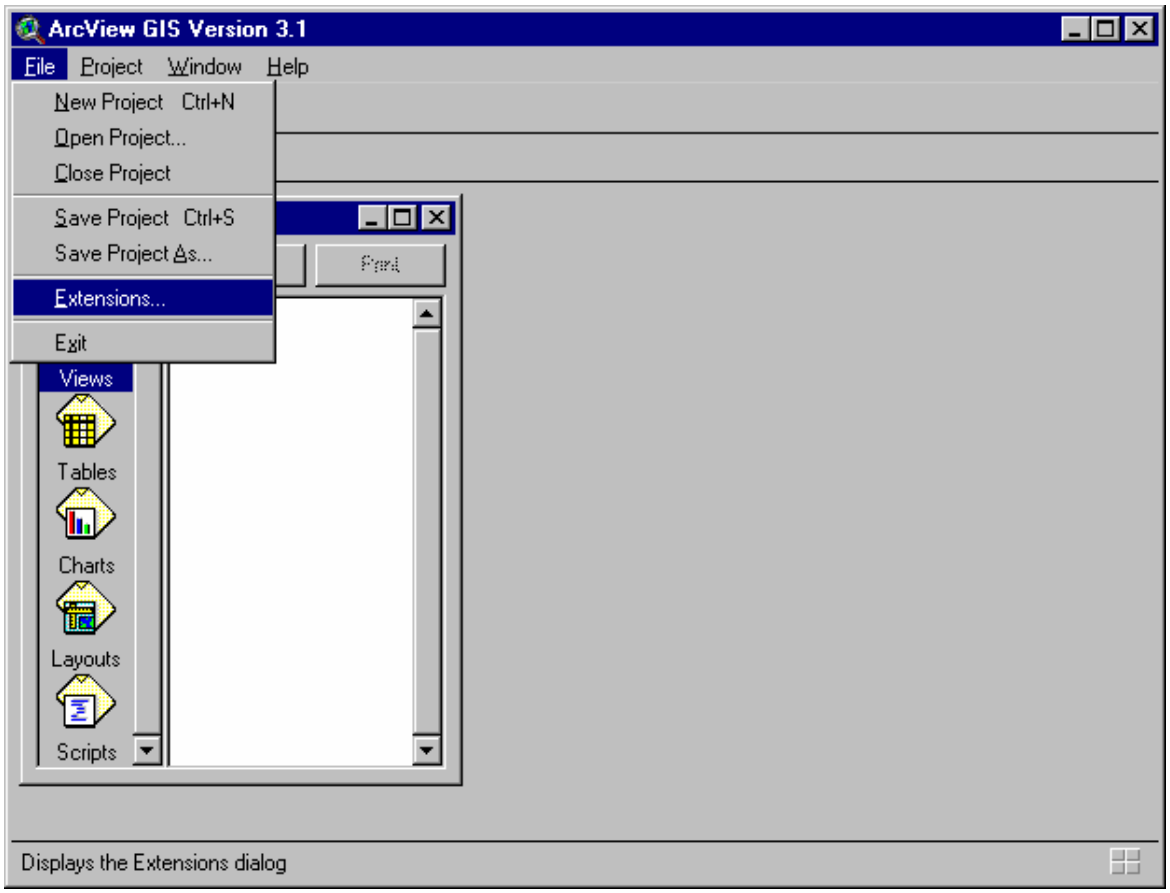
- When creating a new CLU theme, set scale to 1:4,800.
- Defaults to **c:\Geodata** directory on add functions.

QC Tools

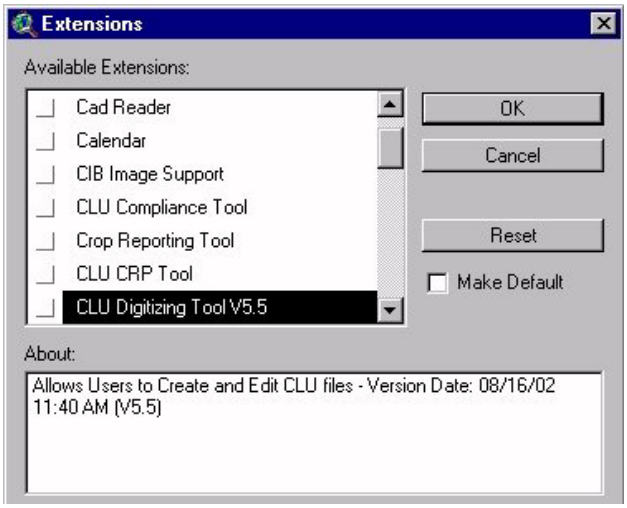
- Added a QC tool to check for duplicate CLUID values and cross-references them with the CRP table. Prints out a report of CRP records attached to CLU records that have duplicate CLUID values.
- Added check for duplicate sub-field numbers in tract/CLU Ratio Tool for the CRL shapefile.

OPENING THE EXTENSION

To access these tools, first open ArcView®. Next, go up to the **"File"** menu and click on **"Extensions."**



A list of available Extensions will be displayed. Click on the **<CLU Digitizing Tool V5.5>** so that the box becomes checked. If that option does not show up on your list, talk to your System Administrator.



After selecting the extension, click the "OK" button. The program will install the appropriate tools and will open a new View for you to start entering data.

When you save your project at the end of your first work session, ArcView will keep track of all the data files and extensions that you are working with. When you open the project to begin your next session, all of the files will be restored and you will be ready to continue working.

NOTE: You will not need to select the extension every time you open ArcView.

NOTE: If you are opening a project that was last saved in version 4 of the Digitizing Tool there are a few steps that you must take to open it in version 5.5. The **FIRST TIME** the project is opened in version 5.5 the program will ask where the Multi-Item labeling tool and FSA Layout tools are. Hit cancel for each of these, and once the project is saved in Version 5.5, it shouldn't ask again. These extensions are still a part of the tool; they have just been combined into the Utilities extension.

USING THE CLU DIGITIZING TOOL

On the ArcView toolbar, select the "CLU" button, which will open the CLU Digitizing Tool.

THE CLU TOOLBAR

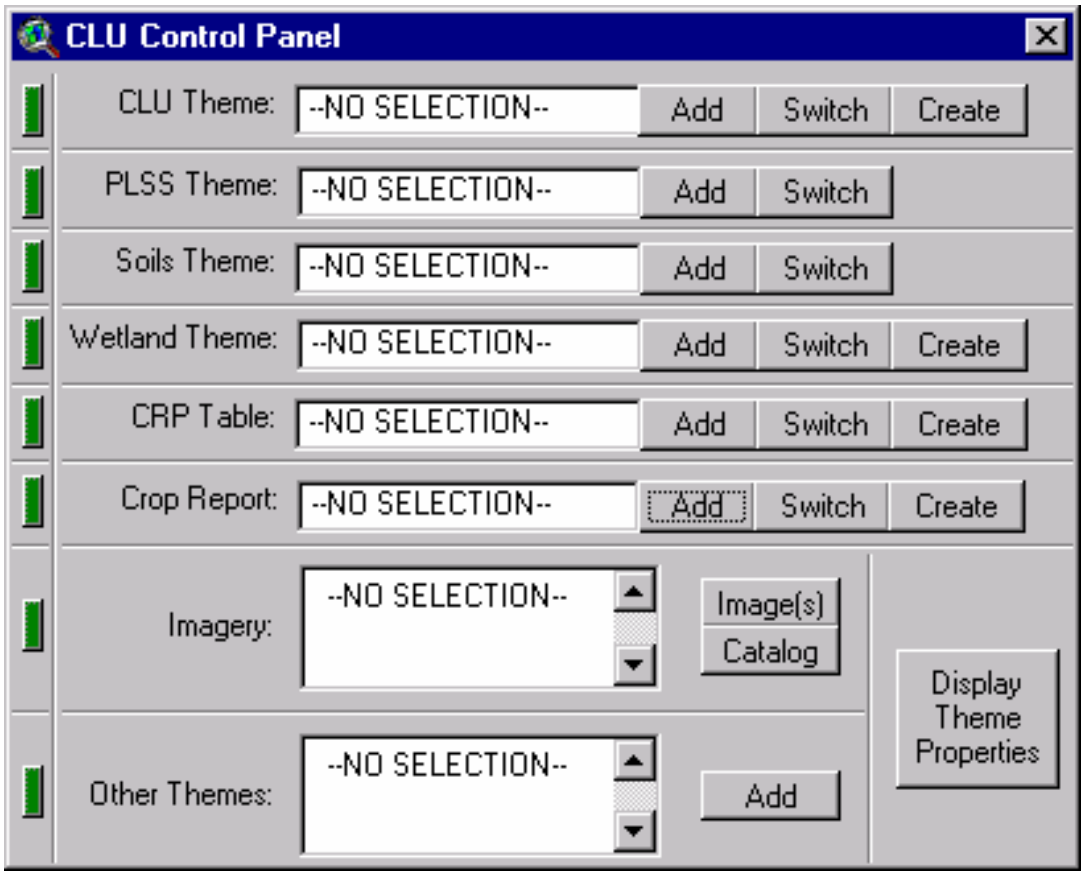
In conjunction with the standard ArcView toolbars, this toolbar has all of the tools that you need to create and modify Common Land Unit polygons.

CLU CONTROL PANEL

The "CLU Control Panel" button  allows the user to specify and add the following themes: a CLU theme to edit, a PLSS theme, a soils theme, Imagery theme, Wetland theme, CRP table, and a Crop Report theme. The green light indicates which theme is loaded.

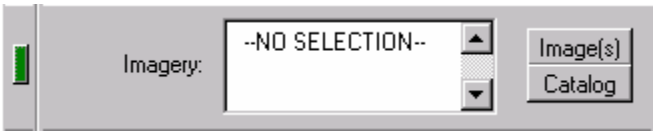
Click on the "CLU Control Panel" button to open the "CLU Control Panel" dialog.

Note : In the Control Panel of the themes are loaded, and all of the green lights are off.



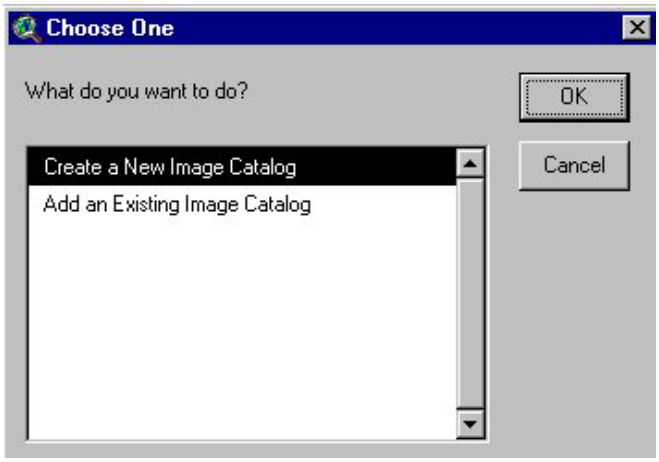
ADDING IMAGERY

Before you begin digitizing, you must add imagery to the View. To select one image, go to the Imagery box on the Control Panel, click the "Images" button, and navigate to where your imagery is saved. Add the image as a theme to your View, and if necessary, click the box in the Table of Contents to turn on this theme.

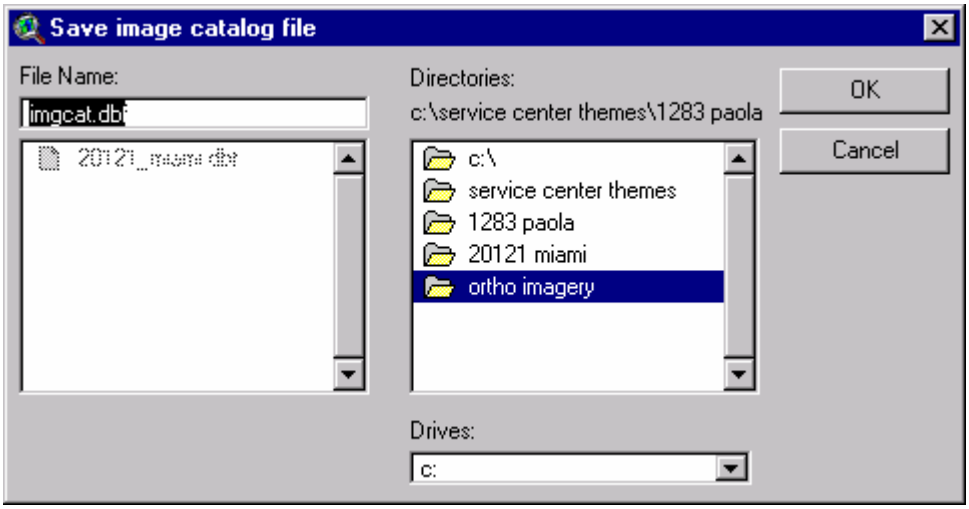


CREATING AN IMAGE CATALOG

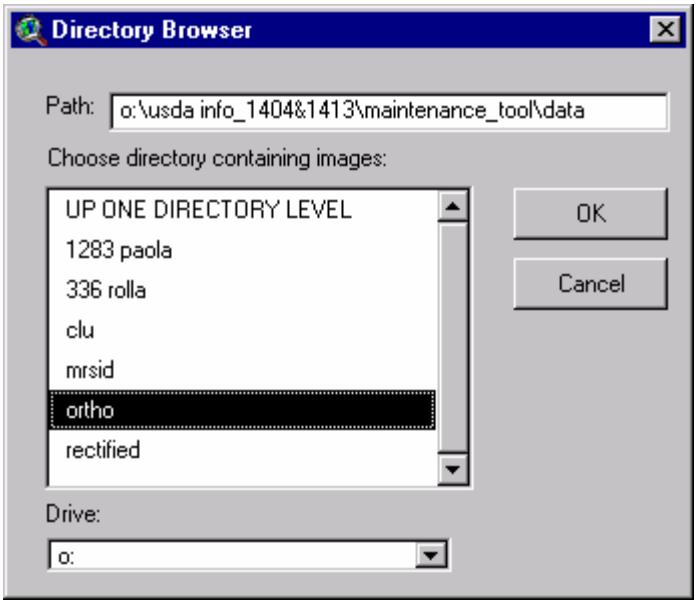
Click on the "Catalog" button in the Imagery box to create a new image catalog or to add an existing image catalog. An image catalog mosaics all selected images and loads them into a single theme on the view. The image catalog will only display the portions of the images that fall within the display.



Create a New Image Catalog If no catalog exists, click on "**Create a New Image Catalog**." Click "**OK**" to begin making an image catalog. A dialog will pop up that asks the user to select a location and name for the new image catalog.



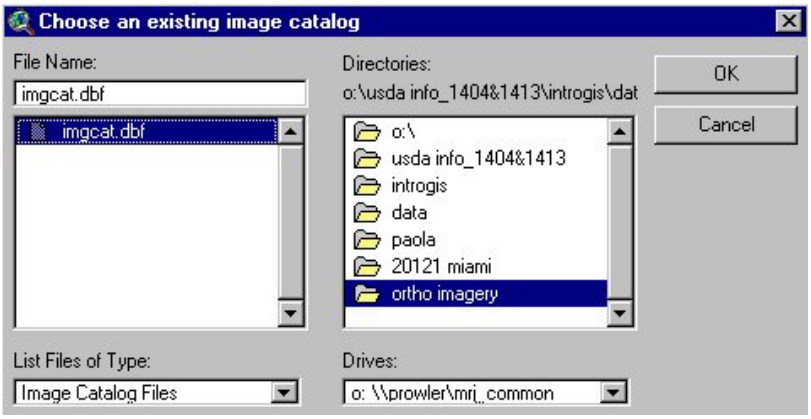
Navigate to the drive where you want to save the catalog, name the catalog and click **"OK"**. A dialog will now ask the user to select the directory that contains all of the images that they want to make into an image catalog.



You must select the drive where the imagery is saved. When the folders in that drive are listed, navigate to the folder that contains the imagery by double clicking on each folder necessary, until the last folder where the imagery is located. When that folder is highlighted (by clicking on it ONCE), click the "**OK**" button to create the image catalog and add it to the current view.

Adding an Existing Image Catalog

When "**Add an Existing Image Catalog**" is chosen, a dialog will pop up that asks the user to choose an existing image catalog.



The "**Choose an existing image catalog**" dialog will allow the user to load an existing catalog. Browse for an image catalog and click on "**OK**" to load it to the view. If no catalog exists, click on "**Cancel**."

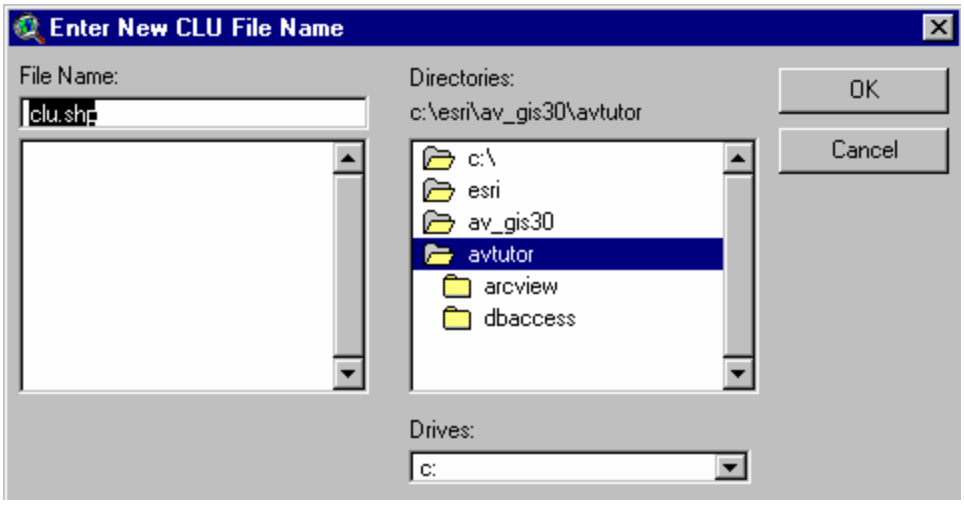
CREATE NEW CLU FILE

Clicking on the **"Create"** button in the CLU Theme box in the Control Panel starts the process of creating a new, empty CLU file. A pop-up window will prompt you for a new CLU file name and directory location.

Choose the correct Drive Letter from the drop-down menu labeled **"Drives."** Then navigate through the **"Directories"** window until you select the correct directory. Finally, type in the appropriate file name in the **"File Name"** window.

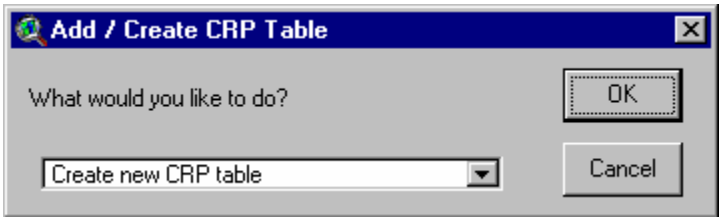
NOTE: Make the name unique, since more than one person may be working in a single county.

After typing in the name, click the **"OK"** button. The file will be created and then added to the legend of your view.



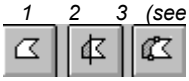
CREATE NEW CRP TABLE

Once the new CLU theme is added, you will be prompted to create a CRP table. **CANCEL this operation**. The Digitizing Tool is not set up to collect CRP information, however creating the table will cause no harm.



DRAWING AND EDITING TOOLS

1 2 3 (see corresponding numbers below)



Use these tools to add polygons to your CLU file. When you click on the appropriate draw tool, you will be able to:

1. Draw a polygon
2. Draw a line to split polygon features
3. Draw a line to append a new polygon adjacent to other polygons

When drawing polygons, lines with three or more points, or splitting/appending to a polygon, you must double-click (quickly click the left mouse button twice) when entering the last point to tell ArcView that you are finished entering vertices.

When drawing a graphic on a view or a layout, its dimensions are displayed in the ArcView status bar. On a view, dimensions are displayed in the current distance units of the view (choose **"Properties"** from the **"View"** menu to review). On a layout, the dimensions are displayed in the current page units (choose **"Page Setup"** from the **"Layout"** menu to review).

NOTE: When a new polygon is created, acreage is automatically calculated and stored for that polygon. In the case of a split polygon, new acreage is calculated for each of the two resulting polygons.

NOTE: The Polygon Tool will not allow you to draw a polygon that overlaps an existing polygon. If you draw an overlapping polygon it will clip out any inclusions and snap to any existing polygons.

VERTEX EDIT TOOL

Use the Vertex Edit Tool to reshape a Common Land Unit polygon by moving, adding, or deleting vertices.

To reshape a single polygon or line

Click inside the polygon or directly on a line. Tiny squares will appear along the polygon or line, which are called "vertex handles." Click and hold the left mouse button down on one of the handles. Now, move the mouse to a new location, then release the mouse button. The shape of the object should have changed.

NOTE: Handles appear at every vertex and end point, and are capable of being added or deleted.

To reshape a common boundary between two features

Click directly on the common boundary line of two polygons. "Vertex handles" will appear at each vertex along the shared boundary and "round anchors" will appear at the vertices located at each end of the common boundary.

NOTE: When you move, add, or delete a vertex, both polygons will be changed.

To move a node that is common to a number of features

Click on a node that is common to two or more polygon features. A square "vertex handle" will appear at this node, and "round anchors" will appear on the next closest vertex on each of the polygons. Now when you move the common node, all polygons that share this node will be changed.

To move a vertex

Place the cursor over the vertex you want to move. When the cursor appears as a "crosshair," hold down the left mouse button and drag the vertex to the new position, then release the mouse button.

To add a new vertex

Move the cursor to a position over a line, which is between two vertexes. When the cursor appears as a "target", click the left mouse button to add a new vertex at that exact location.

DELETE LAND UNIT

To delete a CLU, select the Delete Land Unit button, then click on the CLU to be deleted, or if multiple CLUs are being deleted click and drag a box to select more than one unit

Before they are deleted, a message box will appear asking if you want to delete the unit(s) you selected. Choose "yes" or "no".

NOTE: When the user has finished with this operation, the new acreage of the polygon(s) is/are calculated and stored in the table.

CREATE INCLUSION

The Inclusion button allows the user to draw a polygon inside of another polygon and then subtracts this new polygon from the original polygon. Farm and tract attributes, as well as acreage are calculated for the new polygons. This is used to remove wetland areas, ponds and other "inclusions" from the field.

NOTE: The Inclusion tool will not allow the user to create an inclusion that crosses multiple existing polygons.

CREATE CIRCULAR INCLUSION

The Circular Inclusion button allows the user to draw a circular field inside an existing polygon. The new polygon will clip itself to the surrounding farm boundary if the two boundaries intersect. The acreage in the new polygon(s) is subtracted from the original polygon. For example, this tool can be used to create a CLU field that has circular irrigation.

COMBINE FIELDS

Select two or more fields and then press the Combine Fields button to combine them into a single polygon. The tool will calculate the correct acreage for the new polygon and allows you to select the tract and farm from the existing land units.

> **NOTE:** This tool will zero out the "CLU number" fields.

SAVE CLU EDITS

ALWAYS save your work. It is good practice to periodically (every 5-10 minutes) save your data file with the save button.

SEARCH CLU AND PLSS

The Search CLU and PLSS button allows the user to find land units by:

- farm number
- tract number
- field number (CLU number)
- Section/Township/Range numbering (PLSS)

> **NOTE**: To exit the search without performing any searches, click on the X in the upper right corner of the dialog.

This tool allows the user to enter any of the above information to create an initial "New Set" of information. Then, they can select a subset by using another search criteria using the "Sel from Set" button.

For example:

1) Select the "Farm" category.

2) Type in the farm number you wish to search for.

3) Select the "New Set" button to select all CLUs with that farm number.

4) Select the "Tract" category.

5) Type in the tract number you wish to search for.

6) Select the "Sel from Set" button.

Now you should have only the polygons selected that contain BOTH the farm number AND the tract number that you entered. If you wish to have more than one farm or tract number, select the appropriate category, type in the number to add, and click the "Add to Set" button

To use the Sec-Twp-Rng Query, make Sure PLSS Layer is loaded. Enter the data as "numbers only" in the following order with spaces between them: Section first, Township second, Range last. (Example: 36 15 10)

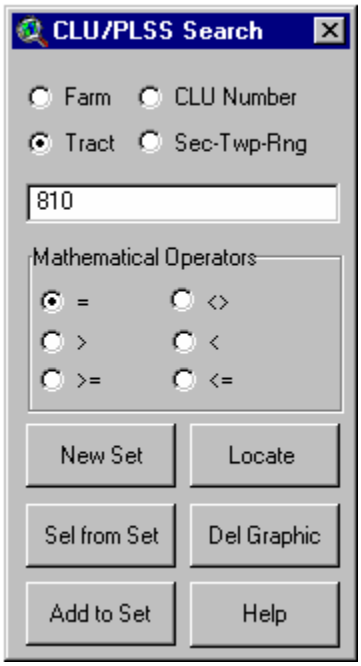
> **NOTE:** PLSS files are not consistent. In some, Township and Range may be text fields with "N" and "E" values included. In these cases the example would be: 36 15N 10E.

The "Locate" function keeps your existing selections while locating and zooming to a new area.

> **NOTE:** If you have examined data using the "Locate" button, you can zoom back to your previous search by using the "Zoom to Selected" button located on the ArcView toolbar. See ESRI ArcView documentation for more details on "Zoom to Selected."

ADDITIONAL NOTE: There is a difference in using the New Set, Sel from Set, Add to Set, Locate and Del Graphic buttons

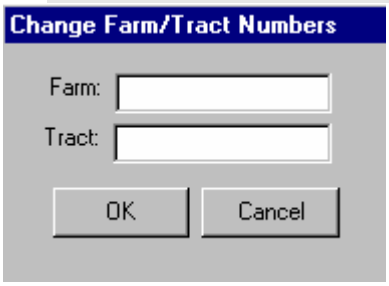
- The **New Set** button selects all polygons that have the attribution equal to the entered value from the entire file.
- The **Sel from Set** button selects the polygons that have the attribution equal to the entered value from the existing selected features, narrowing the selection.
- The **Add to Set** button selects the polygons that have the attribution equal to the entered value, and adds them to the already existing set, creating a larger group of polygons.
- The **Locate** button finds the polygons with the attribution equal to the entered value, and zooms to the polygon(s) without selecting them. It creates a graphic over the polygon(s) located, which is a different color than the CLU layer, making the located polygon(s) easier to identify
- The **Del Graphic** button deletes the graphics created by the Locate button



TRACT/FARM NUMBERING BUTTON

Select one or more Common Land Units using the "Select Feature" button from the standard ArcView interface. Then click on the Tract/Farm numbering to add or update Farm and Tract numbers in the tabular data file. The following dialog box will appear, and will allow the Farm and Tract numbers to be entered. These numbers will be added to the tabular data for all of the selected land units.

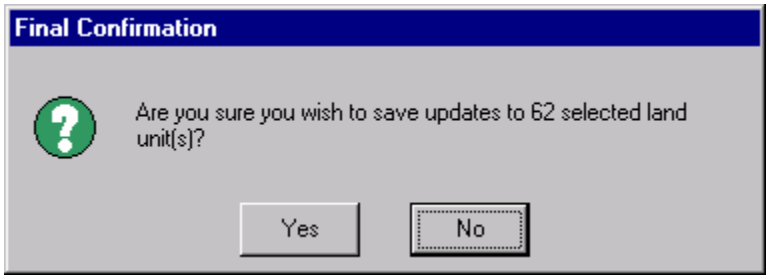
NOTE: To add only a Tract number or a Farm number, leave the field that you do not want to add data to



LAND USE LAND COVER TOOL

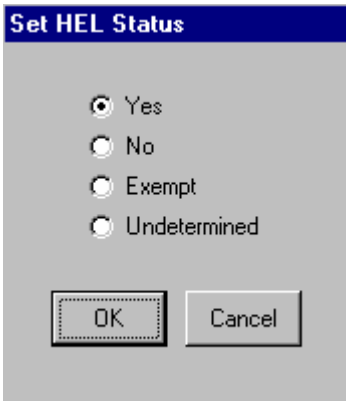
The Land Use Land Cover button allows the user to assign a land use code to one or multiple CLUs. Use the "**select**" button on the ArcView Toolbar to select CLUs (hold the shift key for multiple units). Once the land units are selected open this tool and select a code from the dropdown menu.

You will be asked if you wish to save the update to the number of land units selected. Choose "**Yes**" to save the changes and "**No**" to cancel the procedure.



HEL STATUS BUTTON

Select one or more Common Land Units and then click on the HEL Status button to add or update HEL status to the tabular data file. The following dialog box will appear, which will allow the user to select the appropriate HEL status (Yes, No, Exempt, or Undetermined) for the selected land units.



UPDATE ATTRIBUTE DATA

Clicking on this button will open the following dialog box.

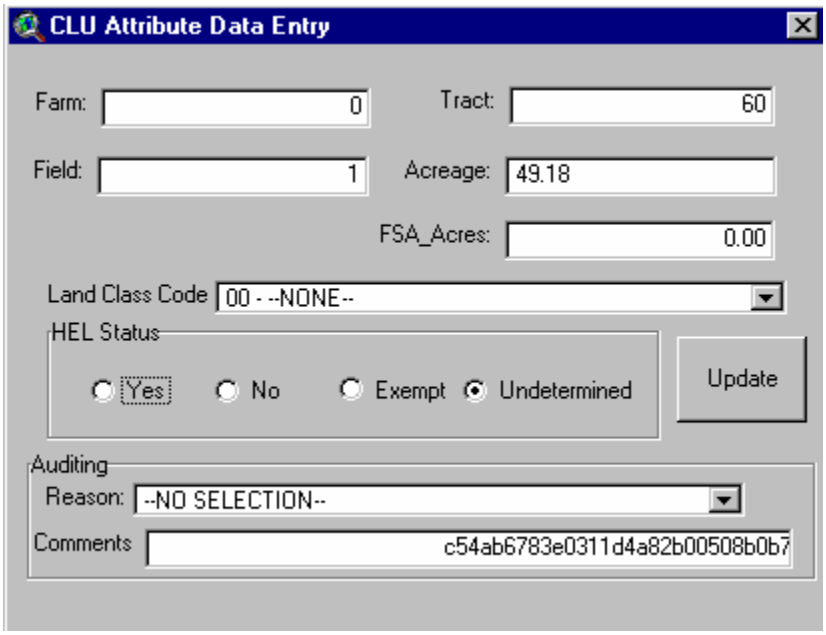
> **NOTE:** This box will stay on the screen until you close it.

As you select Common Land Units, the items in the box will display the current attributes attached to the selected land unit. Change the values to the correct values by physically entering them in the appropriate spaces.

> **NOTE:** System acreage is calculated and can not be entered from this screen.

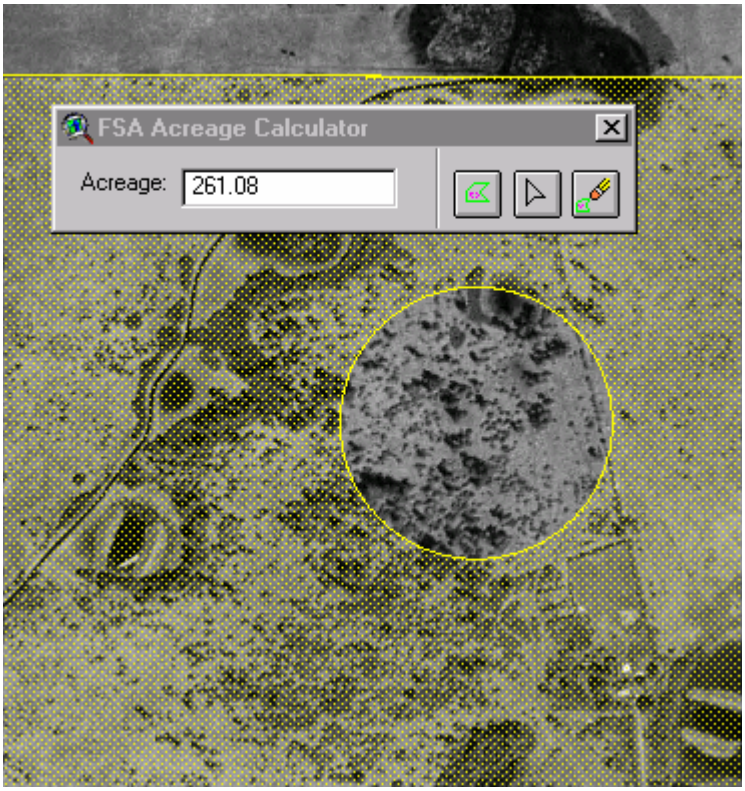
Press **"Update"** to change the values. You can then select another land unit and update the tabular data, or close the form by clicking on the **"X"** in the upper right corner of the box.

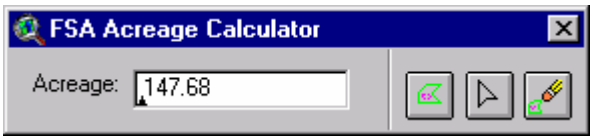
This dialog box can be left open while you add new polygons to the system. After adding a new polygon, enter the attributes for that land unit and click **"Update."**



QUICK ACREAGE CALCULATOR

The "**Quick Acreage Calculator**" button allows the user to review the system-calculated acreage for the selected CLU(s). Multiple CLUs may be selected by holding the shift key and selecting units with the "**Select**" button before clicking on the acreage calculation button, and this will give the total acres for the selected CLUs. This tool stays on the screen so the user can view multiple polygons without having to open it every time. If no CLUs are selected, the "Quick Acreage Calculator" will display zero as the acreage. This interface window can be kept open, and the acreage will adjust to match the selected polygon(s).





The three buttons on the right allow the user to manually check the acreage of an area, and to compare that acreage to the acreage of an existing polygon. With this tool, the user has the ability to draw an outline around a potential field and determine the acreage of that field (through the on-screen display), without adding a polygon to the layer. The second button allows the user to modify the vertices of acreage graphic using vertex handles to move graphic line. The third button on the left deletes all of the lines drawn by the user using this tool.

UPDATE SYSTEM ACREAGE

Click on the "**Update System Acreage**" button to recalculate all or selected land unit's acreage for a theme if needed.

MULTI-ITEM LABLELING TOOL

The "**Multi-Item Labeling Tool**" button allows the user to add and remove text labels from the view. The user can also stack, order, and set preferences on the labels as well.

Click on the "**Multi-Item Labeling Tool**" button to open the "Multi-Item Labeler" dialog.

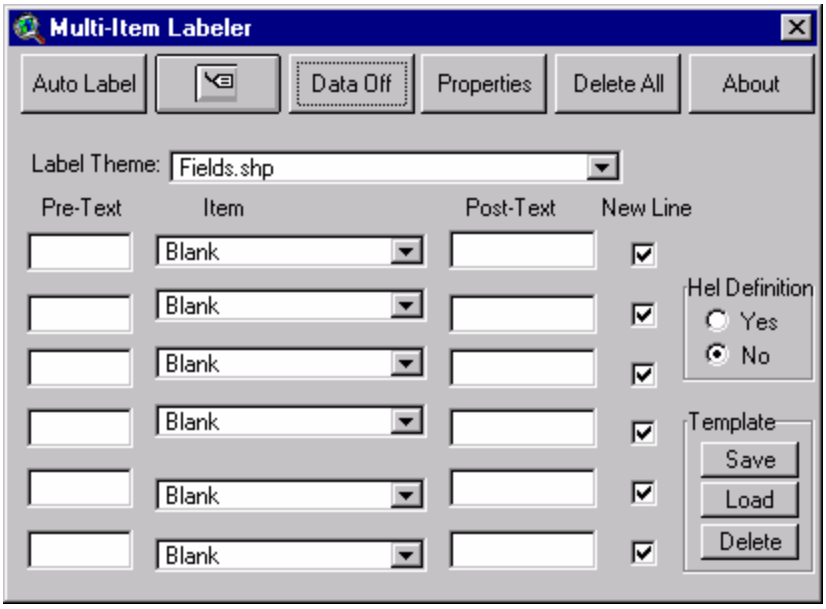
The "**Auto Label**" button allows the user to have ArcView automatically place the selected labels in each of the selected polygons (or all polygons if none are selected).

When all preferences and label attributes are set, click this button to begin auto labeling.

The Manual Label button allows the user to place labels on the view one at a time manually.

When all preferences and label attributes are set, click this button to begin placing the labels manually. Move the cursor over an individual polygon and click to place the label.

The "**Set Data**" button allows the user to change what theme will be labeled and the order in which they will be displayed. Click on the "**Set Data**" button to display more options. Click on "**Data Off**" to close out these options.

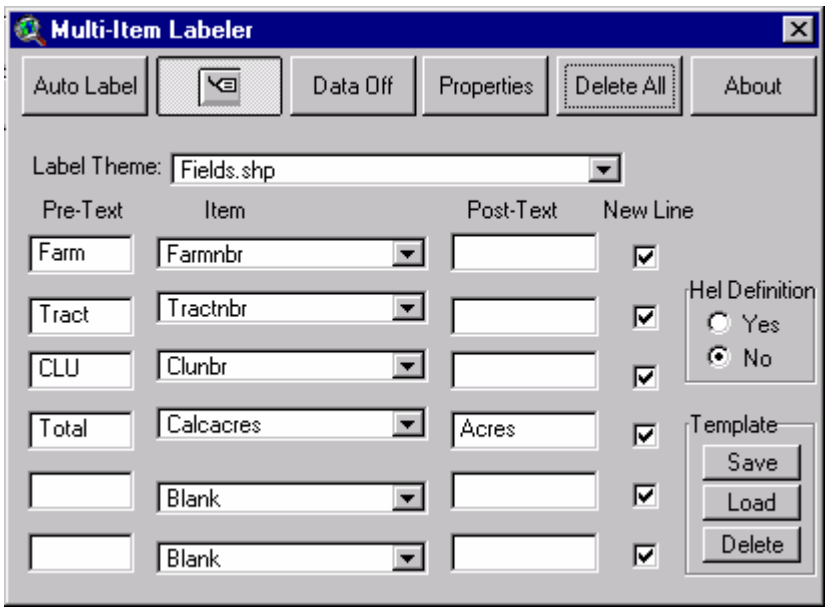


- **Label Theme:** Click on the down arrow to choose a theme to place labels on.
- **Pre-Text:** Type in a text string that will be placed in front of the label item.
- **Item:** Click on the down arrow to choose a label item (ex. Farm or Tract).
- **Post-Text:** Type in a text string that will be placed in back of the label item.
- **New Line:** Check this box if each label should be on a separate line, un-check the box to make the text labels on the same line.

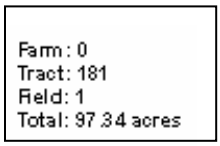
Hel Definition: Ability to display HEL in the label, links the designated Hel tavle to HEL Def item link to HEL database.

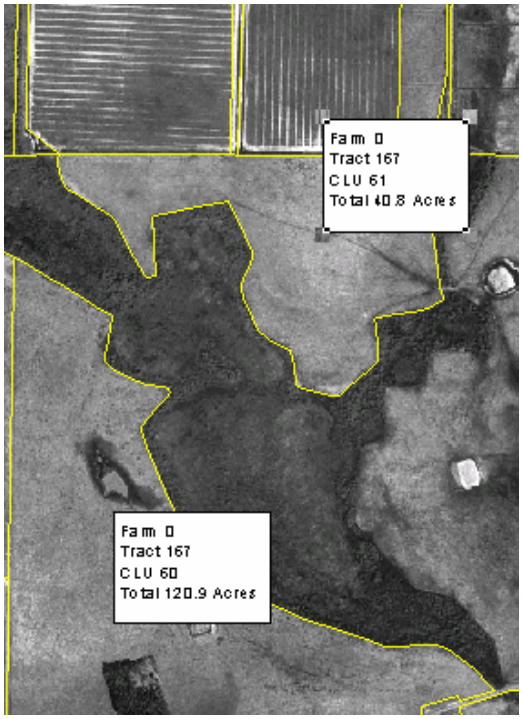
Template : Ability to create, save, load, and delete label templates. The templates can be saved and reloaded at a later time. When the user is finised with label template, the user can delete it.

When the user chooses and displays correct labels content, the following is an example of Mulit Item Labler filled out correctly.

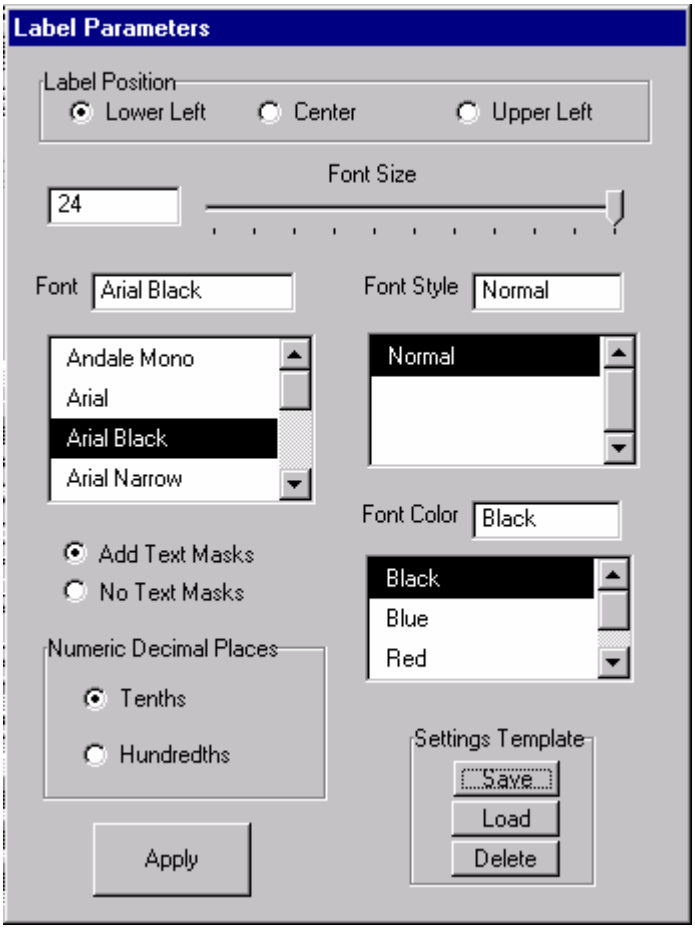


The label would look something like this:





The "**Properties**" button allows the user to set or modify the label's text attributes. Click on the "Properties" button to bring up the "Label Parameters" dialog.



Select Label Position

The **label position** is only used for auto-labeling and refers to the position of the text within the polygon. If the text does not fit within the polygon, then a "best" placement is chosen. Manual labeling places the label at the point where the user clicks.

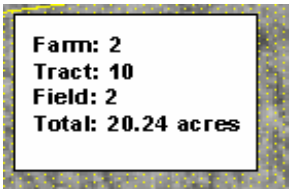
- **Font Size:** Either type in or use the scroll bar to choose the font size.
- **Font:** Either type in a font or choose one from the scroll down.
- **Font Style:** Either type in a font style or choose one from the scroll down.
- **Font Color:** Either type in a color or choose one from the scroll down.
- **Text Masks:** Choose to add text masks for a solid fill background around the label or choose not to draw text masks.
- **Setting Templates:** Allows the user to save, loads, and delete current label properties.
- **Numeric Decimal Places:** Allows the user to set decimal labels to the tenth and one-hundredth decimal place.

Click on Apply to set these preferences.

The "**Delete All**" button will remove all graphics and text labels from the currently selected theme.

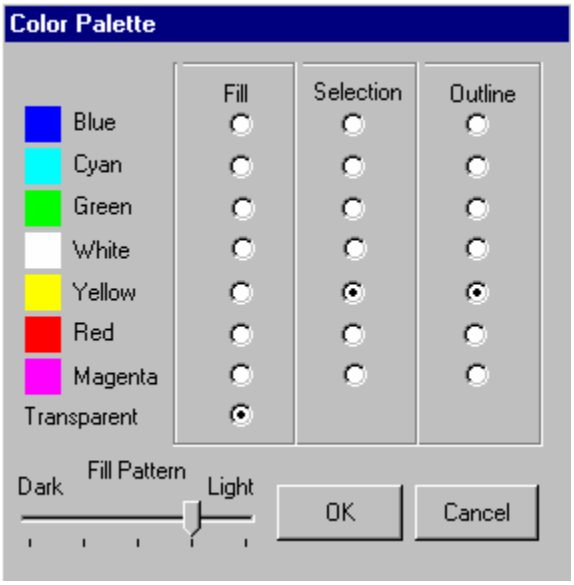
The "**About**" button opens a pop-up, which shows the version and date of release, as well as some contact information.

The label would look like this:



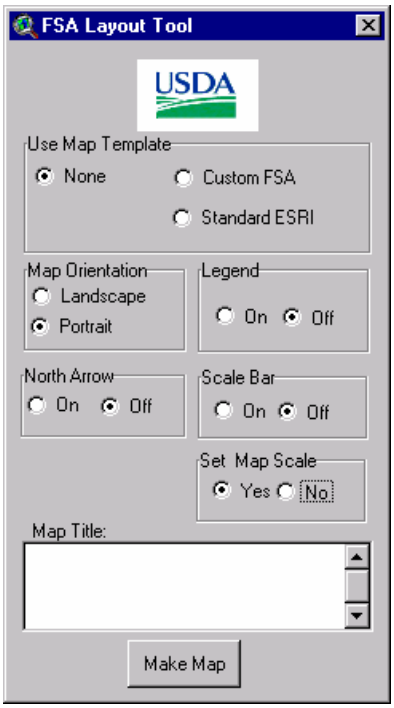
COLOR PALETTE

The Color Palette button allows the user to change the Fill, Selection, and Outline colors of the selected Themes. The "Semi-Transparent Fill" checkbox can be used to set the fill pattern to a semi-transparent fill, so the imagery can be viewed through the CLUs. The Fill Pattern scale can be used to set the fill pattern to clear or semi-transparent fill so the imagery can be viewed through the CLUs.



CREATE LAYOUT

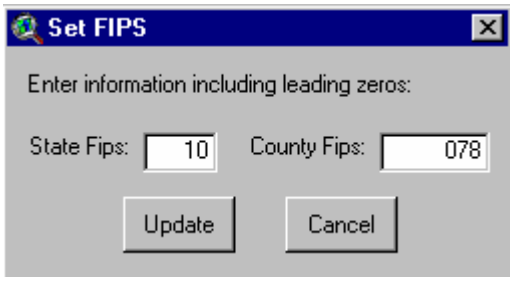
The Create Layout button allows you to create a custom map of selected land units. When a View is open, you can create a very simple layout of what is displayed in the View.



Click on this button and choose the type of layout you want by clicking in the appropriate radio box {None, Custom FSA, or Standard ESRI). Then choose the map orientation {Landscape or Portrait}, Legend {On or Off}, North Arrow {On or Off}, Scale Bar {On or Off}, and Set Map Scale {Yes or No}. Type in a Map Title in the space provided then click on "Make Map." A new layout will appear with all of the selected elements in place.

SET FIPS NUMBER

The Set FIPS Button allows the user to set FIPS codes for the CLU layer. Enter the county and state FIPS codes for the county you are working on, including leading zeros if necessary.



When the correct numbers are entered hit "Update" and all of the CLUs in the CLU layer will be updated with the proper FIPS code.

PLSS SECTION MAPMAKER

Click on the PLS button to open the PLSS Section Mapmaker dialog. However, before opening the dialog, you need to create at least one document, a view containing the PLSS layer (must be a polygon layer, not a polyline layer), the CLU layer, and (optionally) the DOQ imagery. If you want to utilize a locator inset map on your layout, also create a "locator map" view, which would contain the PLSS layer and also a Township layer (to make your locator map more readable).

Use the multi-item labeling tool to label your CLU file as desired.

You may also want to create your layout. If you create your own layout (or template) from scratch, you will need to include several tokens, which are used by the program to fill in information as section maps are created and printed. These tokens are:

&twpname	Township Name
&twp	Township Number
&rng	Range Number
&sec	Section Number
&date	Date

As the program runs, the appropriate text (or the current date) replaces these tokens. Not all of the tokens must be used (for example, not all PLSS files contain Township names). These tokens can be used in any order and placed anywhere on your layout. For example you might create either of the following text string on your layout:

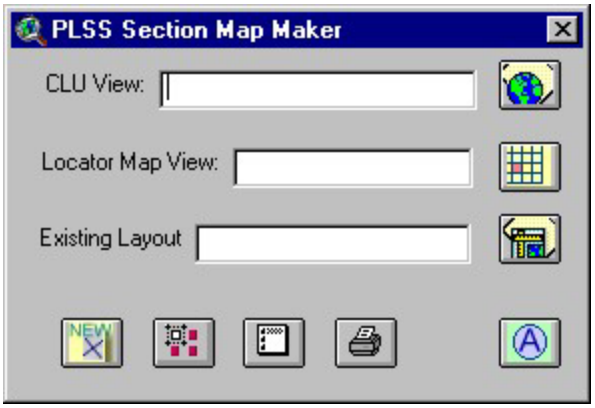
"Sec-Twp-Rng: &sec - &twp - &rng" or "Twp-Rng-Sec: &twp - &rng - &sec".

These strings would be translated by the program as:

"Sec-Twp-Rng: 35 – 15 – 21" or "Twp-Rng-Sec: 15 – 21 – 35".

After you have printed the layouts using this program, the tokens are no longer visible, having been replaced by text. However, the tokens are still attached to the pieces of text and can be appropriately interpreted by the program when you create new maps in the future. Once you have created a layout that suits your needs, there is NO need to create a new one. You might want to create a number of layouts, such as a standard section map, a producer section map, etc. to accommodate various needs.

The PLSS Section Map Maker Dialog



Select CLU or Main View

Identify the CLU (or Main) View, which will be used for generating Section maps. This view must have a PLSS layer, and should have your CLU layer and orthoimagery. MrSID or other compressed imagery is preferred for generating section maps, but full resolution TIFF imagery can be used.

Select Locator Map View

Identify a Locator Map View, which will be used to generate a locator map on your layout. This view must contain the PLSS layer. It can also contain other layers, such as a township layer, which will make the locator map more useful. You do not need to have a locator map on your layouts. This cannot be the same view as your CLU View.

Select Existing Layout

Identify an existing layout to be used for generating Section maps. You can use any previously created map template (remember to include the tokens to display the appropriate township, range, and section numbers).

Create New Layout

If you have not previously created a layout in this project for generating Section maps, you can use this function to generate a basic map, which can be customized as appropriate.

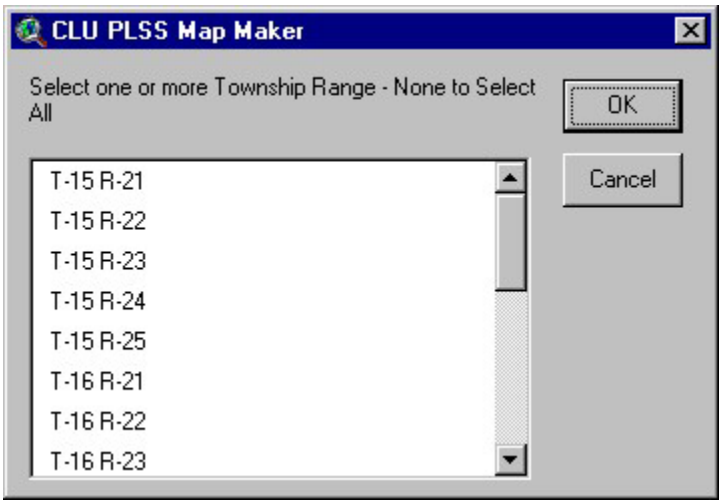
Select Sections by CLU

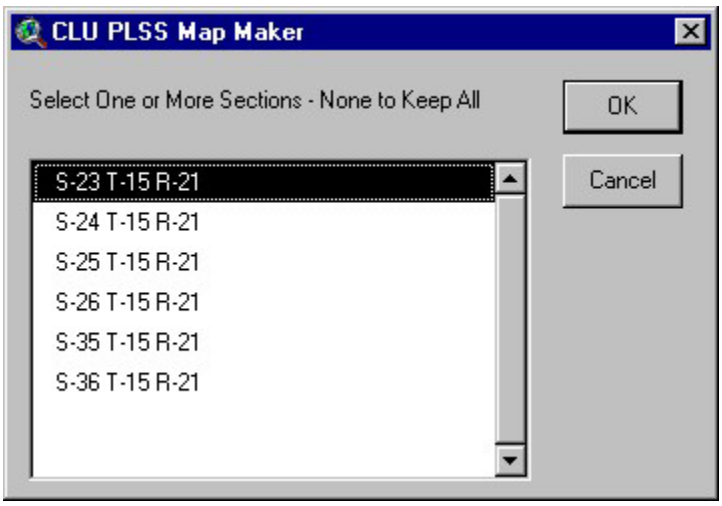
Select sections to print based on selected CLU records. For example, you can select a farm and print section maps of that farm for a producer. The layout could then be customized with the producer name, etc. Select the common

land units using the CLU Search button (or standard ArcView query). Then press this button to select the appropriate sections. Unselect CLU polygons before printing maps, unless you want them highlighted.

Select Sections and Townships from a List

Select sections based on a list of Townships and Ranges. You will be given a list of Townships to select from and then a list of Sections. You can select either entire Townships (up to 36 sections each) for printing, or you can print selected sections from a single Township.





NOTE: The program allows you to select ALL of the townships in a PLSS file (the entire county). This could overload your printer and is not recommended.

Generate and Print Section Maps

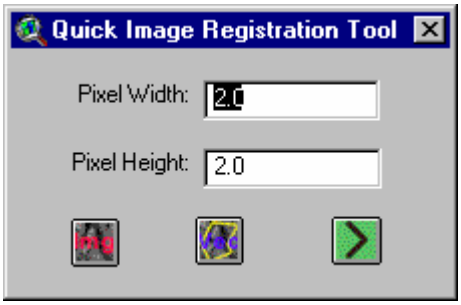
Generate and Print Section maps. PLSS Sections must be selected for this option to work. If you wish to print your CLU layer with labels, they must be labeled before printing.

About PLSS Section Mapmaker

Use the About button to obtain standard information about the PLSS Section Mapmaker tool.

QUICK IMAGE REGISTRATION TOOL

This tool does a one-point registration of a TIFF format image theme to a vector theme. The two themes must be added to two separate views. The user then clicks on the Utilities Toolbar Quick Image Registration Tool button (above) to open the Quick Image Registration Tool dialog box (see figure below).



The user must enter a pixel width and height. Then the user must click on the red "Img" button in the dialog box, and on the "source" point in the image view. A red circle graphic appears at the selected location. Next, the user must click on the blue "Vec" button on the dialog box, then on a corresponding "target" point in the vector view. A blue circle graphic appears at the selected target location. The order of point selection is irrelevant. The user then clicks on the green arrow button to bring the image theme into the vector view at the selected point location.

The tool changes the georeferencing information in the world file associated with the image file. TIFF formatted images have associated tfw world files. The user needs write permission on the image world file to use the tool.

If the image registration or pixel size is incorrect, the user may alter the pixel dimensions or registration points and repeat the registration.

The following figure shows the results on a one point registration to the Common Land Unit vector layer.

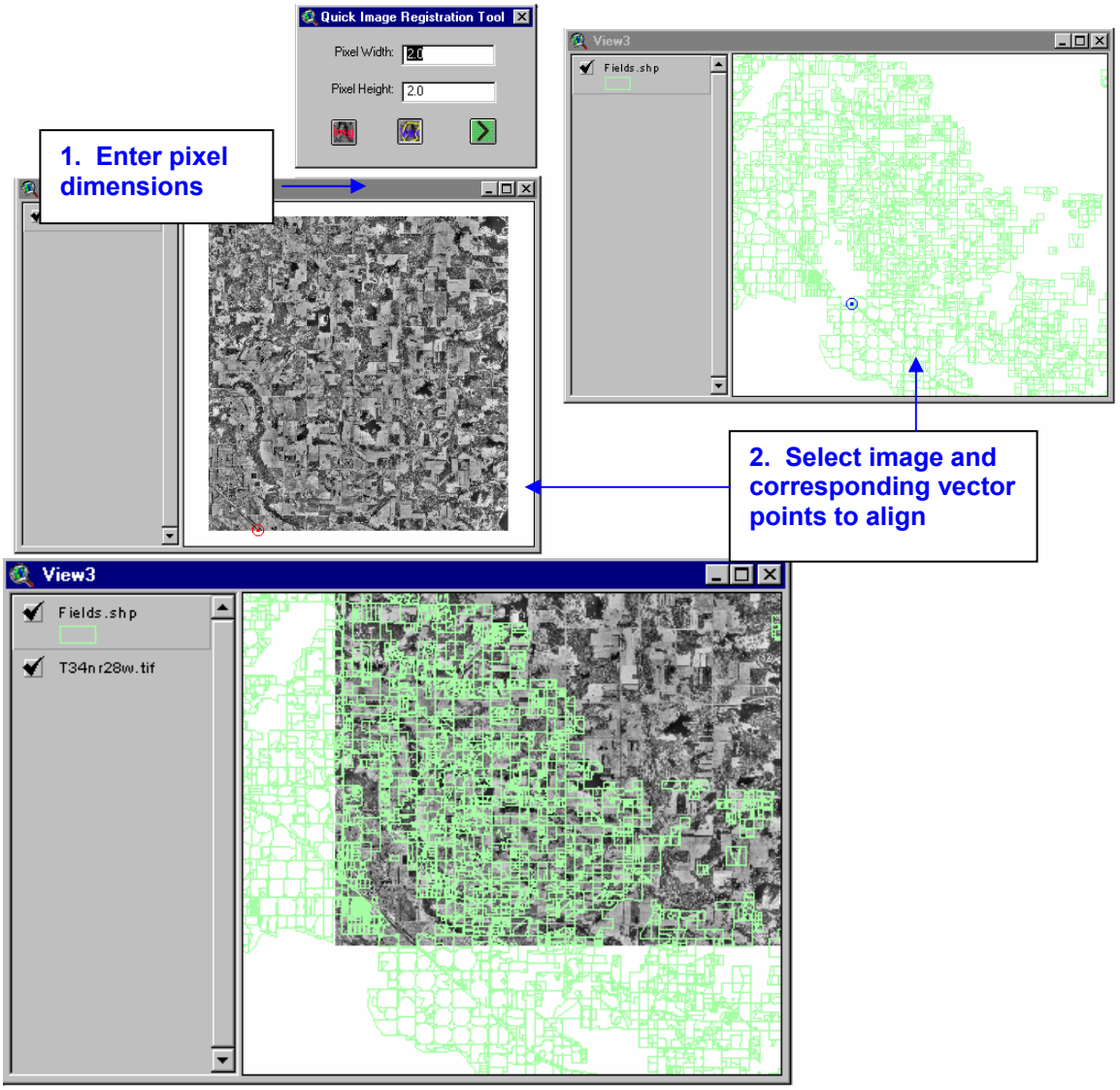


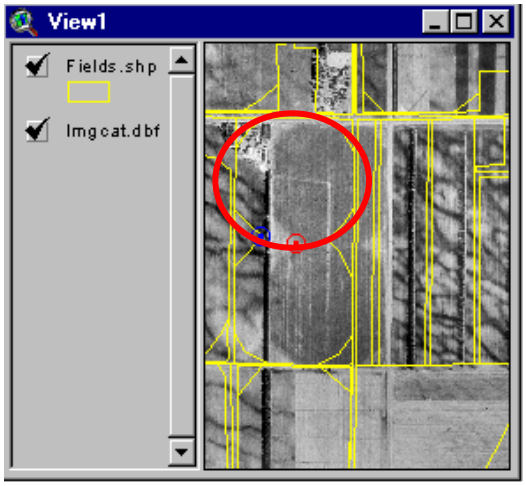
IMAGE SHIFT TOOL

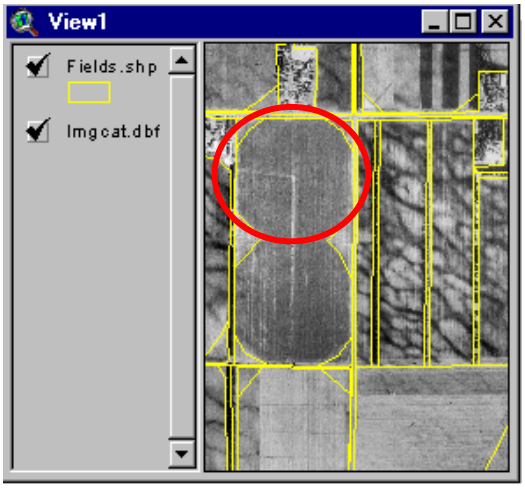
The Image Shift tool aligns an image theme point with a vector theme point. It works with TIFF, MrSID, ECW and ArcView image catalog file formats, and it modifies coordinates in image world files (tfw, sdw, ERS and dbf).

The world files must have "write" privileges and must be copied before using the tool. If a world file does not exist for the image, the tool will create one for it. An Image Data theme and a CLU theme must be added to the view through the CLU Control Panel before using the Image Shift tool.

Click the Image Shift Tool button on the ArcView toolbar to open the tool.

Click the "Img" button and select a point in the Image theme. Then click on the "Vec" button and select the point in the CLU theme where that point and the point selected in the image theme should align.





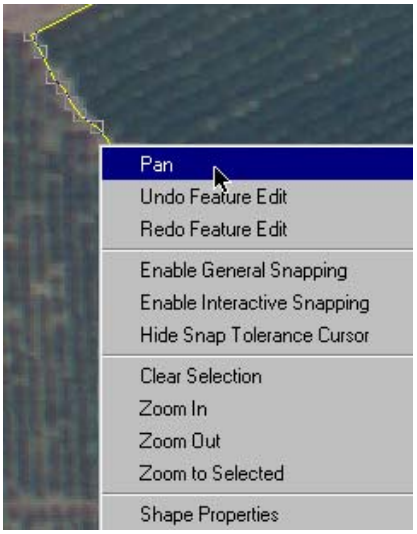
Click on the "**>**" button to change the coordinates in the image's world file. Nothing will appear to happen in the View. Click the "Accept" button to perform the actual shift of the image. Click the "Cancel" button to cancel the shift.

INTERACTIVE MEASURE TOOL

This Tool allows users to create graphics of user defined distances. After a line segment is drawn, the tool prompts the user for the actual line distance. The Tool shortens or lengthens the line segment based on the user's actual distance. To clear lines drawn by the tool, choose "Select All Graphics" from the Edit menu and hit the "Delete" key on the keyboard.

MANEUVERING WHILE DIGITIZING

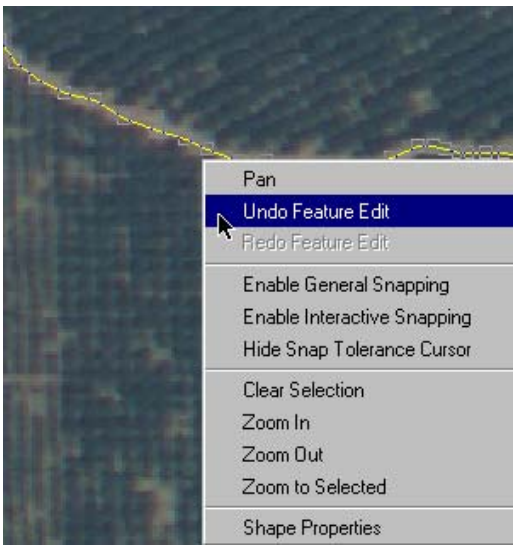
Sometimes, while digitizing, the feature you are creating extends beyond the edge of the View screen. In order to "Pan" without interrupting the digitizing process, move your cursor over the area where you would like to "pan" to, then click and hold the **RIGHT** mouse button. A pop-up menu will appear with some choices of editing and movement options. Choose the "Pan" option and your View will automatically be centered on the area where your cursor lies.



VERTEX ERROR CORRECTION

One way to correct a mistake made while editing vertexes is to click and hold the **RIGHT** mouse button. A pop-up window opens with several editing choices. Choose "Undo Feature Edit".

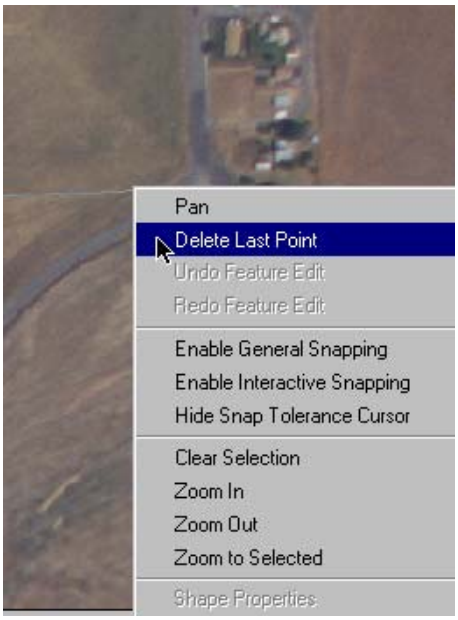
NOTE: You can undo every edit since the last time the file was saved.



DRAW TOOL ERROR CORRECTION

To "undo" the last digitized "vertex" while digitizing new polygons or lines, click and hold the **RIGHT** mouse button. A pop-up menu will appear with editing choices. Choose the "Delete Last Point" option so that the last digitized point will be removed.

NOTE: You can delete every point in a polygon that you are creating **except for** the first digitized point.



DIGITIZING UTILITIES MENU

This menu incorporates some additional functionality that may be needed occasionally.

About CLU Extension
Choose this option to bring up a dialog box that contains the release date for the current installed version of the tool and additional contact information.

NOTE: TO ACCESS THE GUIDES BELOW JUST CLICK ON THE GUIDE YOU WANT TO REVIEW AND IT WILL OPEN AUTOMATICALLY.

QUALITY CONTROL USER GUIDE V5.5

UTILITIES TOOL USER GUIDE V5.5